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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,578	03/28/2001	Ahmed A. Busnaina	837BUS-X	3505

7590 03/26/2003
James Marc Leas
37 Butler Drive
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EXAMINER

MARKOFF, ALEXANDER

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 03/26/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,578

Applicant(s)

BUSNAINA, AHMED A.

Examiner

Alexander Markoff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. It is noted that the presented claims are directed to distinct inventions, which could be restricted. No restriction requirement is made this time because the same prior art could be applied to the both inventions. The applicant is, however, advised that if the claims would be amended to require separate consideration and/or search and to put burden on the examiner, such restriction requirement could be issued.

Information Disclosure Statement

2. The information disclosure statement filed 12/02/02 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

It is noted that the applicants have not provided copies of all references listed on PTO 1449. Instead of the copies they provided abstracts of these documents. It is further noted that quality of significant part of these abstracts is very poor and that it is not possible to read these abstracts.

The recitation of these documents was deleted from the PTO 1449.

3. The information disclosure statement filed 12/02/02 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in

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the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

4. Figures 1 and 1 A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-22, 26, 27, 37, 44-47 and 55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-22 are indefinite because the term "the wafer" in claim 1 lacks proper antecedent basis.

Claims 26 and 27 are indefinite because it is not clear what is referenced as "said space".

Claims 37 and 55 are indefinite because the term "dilute" is a relative term.

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Claims 44 and 45 are indefinite because the term "said space" lacks antecedent basis.

Claims 46 and 47 are indefinite because the term "said megasonic energy" lacks antecedent basis.

These claims are also not proper because they recite method steps in an apparatus claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-11, 18, 20-23, 41-48, 55 and 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-13396 in view of Bran (US Patents 5,090,432 and 5,286,657) and JP 7-211,684.

JP 5-13396 teaches (entire document, especially figure 2 and the description) a method and an apparatus as claimed except for clear recitation of flow of the liquid and means for flowing. It is noted that this reference teaches all claimed limitations for frequency and power.

Flowing liquid during cleaning in the apparatuses for cleaning individual substrates was conventional feature required to remove particles. See Bran and JP 7-211684.

It would have been obvious to an ordinary artisan at the time the invention was made that flowing is presented in the method of JP 5-13396 and that the apparatus is provided with means to enable such function.

In alternative, it would have been obvious to an ordinary artisan at the time the invention was made to provide such features in the method and the apparatus of JP 5-13396 in order to facilitate removal of particles from the substrate.

As to a relative motion between the substrate and the transducer: Bran teaches rotating the substrate to enhance the cleaning.

It would have been obvious to an ordinary artisan at the time the invention was made to rotate substrate in the method and the apparatus of JP 5-13396 in order to enhance the cleaning.

As to the claims requiring the specific distance between the substrate and the transducer:

It would have been obvious to an ordinary artisan at the time the invention was made to find an optimum distance between the transducer and the substrate by routine experimentation in order to enhance the process, especially in view of the fact that Bran evidences that the claimed distance is conventional in the art.

10. Claims 12-17, 24-40 and 49-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-13396 in view of Bran (US Patents 5,090,432 and 5,286,657) and JP 7-211,684, further in view of Ferrell (US Patent No5,909,741) or Fishkin (US Patent No (6,311, 702).

The claims require transducers facing both side of the substrate.

First, it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Second, it was conventional in the art to provide transducers facing all sides of substrates. See Ferrell and Fishkin as evidence.

It would have been obvious to an ordinary artisan at the time the invention was made to provide the second transducer in the modified JP 5 – 13396 with reasonable expectation of success in order to better clean the substrate.

11. Claims 38 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-13396 in view of Bran (US Patents 5,090,432 and 5,286,657) and JP 7-211,684, further in view of Ferrell (US Patent No5,909,741) or Fishkin (US Patent No (6,311, 702), further in view of Bok (US Patent No 5,339,842; EPA 603,008)

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These claims require horizontal placement of the substrate. The examiner's position is that such position was conventional in the art. See Bok as an evidence.

Thereby it would have been obvious to an ordinary artisan at the time the invention was claimed to place the wafer vertically in the modified method of JP 5-13396 in order to simplify moving the substrate for further processing.

12. Claims 19 and 56 and are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-13396 in view of Bran (US Patents 5,090,432 and 5,286,657) and JP 7-211,684, further in view of Bok (US Patent No 5,339,842; EPA 603,008)

These claims require horizontal placement of the substrate. The examiner's position is that such position was conventional in the art. See Bok as an evidence.

Thereby it would have been obvious to an ordinary artisan at the time the invention was claimed to place the wafer vertically in the modified method of JP 5-13396 in order to simplify moving the substrate for further processing.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Markoff whose telephone number is 703-308-7545. The examiner can normally be reached on Monday - Friday 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on 703-308-4333.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Alexander Markoff
Primary Examiner
Art Unit 1746

am
March 24, 2003

**ALEXANDER MARKOFF
PRIMARY EXAMINER**